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10/538,193	04/21/2006	Taavi Hirvonen	187-95 PCT/US	1356

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HOFFMANN & BARON, LLP
6900 JERICHO TURNPIKE
SYOSSET, NY 11791

EXAMINER	
AKBAR, MUHAMMAD A	
ART UNIT	PAPER NUMBER
2618	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/30/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/538,193	HIRVONEN ET AL.	
	Examiner	Art Unit	
	Muhammad Akbar	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 June 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. FI 20022257.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *07/11/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claim(s) 1,8-9,11-16,17-20 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Telewski (U.S. Patent No. 6,021,315) and in view of Kuroda (U.S. Patent No. 3,383,630).

Re claim 1, Telewski discloses a system and method for testing wireless communication RF device (10 of fig. 5B) i.e. radio device comprising a waveguide (102 of fig. 5B) closed at both ends (see fig.1) and comprising a cradle (152 of fig.4C) i.e. holder arranged to hold the radio device (10) inside the waveguide in such a manner that the radiating part of the radio device remaining outside the waveguide is entirely inside the holder (152); and antenna (12 of fig.3) coupled inside the waveguide for transmission and reception of a radio-frequency signal propagation (see abstract, fig.3-5B, col.2 lines 45-47). But failed to disclose the waveguide comprises: and one or more ridges, the end of at least one ridge facing the holder being beveled. However, Kuroda teaches electromagnetic wave transmission device having a waveguide comprises ridges (4 and 4' of fig.8) and the end of the ridge the holder being beveled (see 5 and 5' of.fig.8, and col.2 lines 11-20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system for testing RF device comprises waveguide and holder and antenna coupled to the waveguide for transmission and reception of radio frequency signal propagation (as taught by Telewski) by incorporating plurality of ridges having beveled for prevention of reflection into the waveguide (as taught by Kuroda) to minimize the whole electromagnetic transmission for providing small size microwave for better test result.

Re claim 8, as discussed above with respect to claim 1 and Telewski further discloses the end of the cradle (152 of fig.4C) i.e. holder opposite relative to the waveguide is closed (see fig.4C) [the end of cradle (holder) holed test RF device wherein opposite relative side of the waveguide is closed]

Re claim 9, as discussed above with respect to claim 1 and Telewski further discloses the cradle (152) i.e. holder is configured to hold the radio device (10 of fig.4C) inside the waveguide (102) in such a manner that the antenna (12 of fig. 4C) part of the radio device is inside the waveguide (see fig 4C).

Re claim(s) 11 and 12, as discussed above with respect to claim 1 and Telewski further discloses arrangement of RF device test comprises an electric coupling through cable (122 of fig.3) of the radio-frequency radiation propagating in the waveguide (102 of fig.3) to external measuring system (100 of fig.3) i.e. measuring device; and coupling is implemented by means of a SMC connector i.e. probes (see fig.3 and 4a-4C,col.8 lines 40-44).

Re claim(s) 13 and 14, as discussed above with respect to claim 1 and Telewski further discloses cradle (152) i.e. holder comprises small openings (156) wherein insertion tools (150 of fig.3) can be inserted for the rest of the radio device (see fig.4c); and radio device (10) to be tested is coupled a control signal that is transferred to the

device by means of a cable (122 of fig.3) and the cradle i.e. holder comprises a aperture (146 of fig.3) i.e. lead-in for the cable (see fig. 3 ,4C and 5B).

Re claim(s) 15 and 16, as discussed above with respect to claim 1 and Telewski further discloses cradle (152) i.e. holder can be inserted inside the waveguide [i.e. cradle can detachably attachable to the waveguide] through insertion tools (150 of fig.4C) and end portion (154) which is attached to the waveguide for physical contact with interior waveguide(see fig.4C and col.9 lines 9-25); and waveguide (102) comprises an opening (140 of fig.4C) and fastening means for the cradle (152) i.e. holder for RF test device fastening(see fig.4C and col.9 lines 1-8).

Re claim 17, Telewski discloses a system and method for testing wireless communication RF device (10 of fig. 5B) i.e. radio device comprising a waveguide (102 of fig. 5B) closed at both ends (see fig.1) and comprising a cradle (152 of fig.4C) i.e. holder arranged to hold the radio device (10) inside the waveguide (102); and antenna (12 of fig.3) generating a propagation which is coupled inside through coupling (146 of fig.4C) of the waveguide (102) for transmission and reception of a radio-frequency signal propagation to the measuring system (100 of fig.3) (see abstract, fig.3-5B, col.2 lines 45-47). But failed to disclose the waveguide comprises: and one or more ridges, the end of at least one ridge facing the holder being beveled. However, Kuroda teaches electromagnetic wave transmission device having a waveguide comprises ridges (4 and

4' of fig.8) and the end of the ridge the holder being beveled (see 5 and 5' of fig.8, and col.2 lines 11-20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system for testing RF device comprises waveguide, holder and antenna coupled to the waveguide for transmission and reception of radio frequency signal propagation (as taught by Telewski) by incorporating plurality of ridges having beveled for prevention of reflection into the waveguide (as taught by Kuroda) to minimize the whole electromagnetic transmission for providing small size microwave for getting better test result of RF device.

Re claim 18, as discussed above with respect to claim 17 and Telewski further discloses arrangement of RF device test comprises an electric coupling (146 of fig.4C) through cable (122 of fig.3) i.e. coaxial cable of the radio-frequency radiation propagating in the waveguide (102 of fig.3) to external measuring system (100 of fig.3) i.e. measuring device (see fig.3 and 4a-4C,col.8 lines 40-44).

Re claim(s) 19 and 20, as discussed above with respect to claim 17 and Telewski furthermore discloses arrangement of RF device test comprises transmitting and receiving radio-frequency signals by transmitter (108 of fig.3) and receiver (110 of fig.3) between the radio device (10 of fig.3) and antenna loop (104 of fig.3) i.e. loop disposed in the waveguide (102), the antenna (104) i.e. loop transferring signal energy to a

measuring device (100 of fig.3) operationally coupled to the antenna (104) i.e. loop (see fig.3 and 4C and col.5 lines 5-44).

Re claim 23, as discussed above with respect to claim 17 and Telewski furthermore discloses the frequency area can be tested simultaneously comprises at least two frequency bands (i.e. 800 MHz and 1800 MHz bands) intended for mobile telephones (see col.1 lines 10-30).

5. Claim(s) 2- 4 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Telewski as modified by Kuroda as applied to claim 1and 17 above and further in view of Canora et al (U.S. Patent No. 6,088,582).

Re claim(s) 2,3 and 4, Telewski discloses all the limitations in combination with Kuroda with respect to claim 1 except end of the waveguide on the side of the holder comprises one or more pegs made from a conductive substance and fastened to the inner surface of the waveguide. However, Canora teaches control environment radio test comprises rectangular waveguide (300 of fig.6-8) having a walls (pegs) made from conductive materials and electromagnetic wave such as radio signal can be propagated on the side walls [plurality of sidewalls act like pegs to the surface for holding the walls inner surface (walls contacted waveguide) into the waveguide] (see fig. 6 and col.6 lines 46-52).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system for testing RF device comprises waveguide and holder and antenna coupled to the waveguide for transmission and reception of radio frequency signal propagation (as taught by Telewski) by incorporating plurality of ridges having beveled for prevention of reflection into the waveguide and ridge is fastened to the walls (pegs) of waveguide (see fig.8) (as taught by Kuroda) by using walls (pegs) made of conductive materials and holding inner surface of the waveguide (as taught by Canora) for electromagnetic signal can be propagated transverse electric mode to get better radiation measurement for RF device test.

Re claim 22,Telewski discloses all the limitations in combination with Kuroda with respect to claim 17 except end of the waveguide on the side of the holder comprises one or more pegs made from a conductive substance and fastened to the inner surface of the waveguide. However, Canora teaches control environment radio test comprises rectangular waveguide (300 of fig.6-8) having a walls (pegs) made from conductive materials and electromagnetic wave such as radio signal can be propagated on the side walls [plurality of sidewalls act like pegs to the surface for holding the walls inner surface (walls contacted waveguide) into the waveguide] (see fig. 6 and col.6 lines 46-52).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system for testing RF device comprises waveguide and holder and antenna coupled to the waveguide for transmission and

reception of radio frequency signal propagation (as taught by Telewski) by incorporating plurality of ridges having beveled for prevention of reflection into the waveguide and ridge is fastened to the walls (pegs) of waveguide (see fig.8) (as taught by Kuroda) by using walls (pegs) made of conductive materials and holding inner surface of the waveguide (as taught by Canora) for electromagnetic signal can be propagated transverse electric mode to get better radiation measurement for RF device test.

6. Claim(s) 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Telewski as modified by Kuroda as applied to claim 1 above and further in view of Fehrenbach et al (U.S. Patent No. 6,021,315).

Re claim 5 and 6, Telewski discloses most of the limitations in combination with Kuroda with respect to claim 1 except absorption material is fastened to the inner surface of the waveguide at the end on the side of the holder; and single-layered or multilayered absorption material is fastened to the inner surface of the waveguide as one or more strips. However, Fehrenbach teaches filing materials level measuring device comprises transmitting and receiving device and waveguide wherein absorption materials is holed inside the inner surface at the end of the waveguide (see fig.6, col.3 lines16-20);and layers of absorption materials(wave damping materials 29 of fig.6) formed inside the waveguide with strips (see fig.6 and col.6 lines 51-54).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system for testing RF device comprises

waveguide and holder and antenna coupled to the waveguide for transmission and reception of radio frequency signal propagation (as taught by Telewski) by incorporating plurality of ridges having beveled for prevention of reflection into the waveguide (as taught by Kuroda) by using absorption materials which is holed inside the inner surface of the waveguide (as taught by Fehrenbach) for equalizing the electromagnetic wave to provide effective reduction of spurious echoes.

7. Claim(s) 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Telewski as modified by Kuroda as applied to claim 1 above and further in view of Mattsson et al (U.S. Patent No. 6,188,365 B1).

Re claim(s) 7 and 10, Telewski discloses most of the limitations in combination with Kuroda with respect to claim 1 except cross-sectional shape of the holder conforms to the external dimensions of the radio device to be tested and that the length of the holder is selected in a manner preventing radio-frequency radiation from propagating out from the end of the holder opposite to the waveguide; and cross section of the waveguide is selected according to the desired frequency range to be tested. However, Mattsson teaches testing device and method (same field of endeavor) wherein transmitter and receiver of electromagnetic wave includes waveguide (1of fig.1) wherein both ends of the waveguide are closed and the dimension of the waveguide may be calculated according to the test device dimension which is to be holed inside the waveguide (i.e. cross section of the waveguide are depends on the test device

dimension such as length width and height) (see fig.11-6 and col.3 lines 1-16); and the dimension of the waveguide is selected according to the various frequency of the tested device band (col.3 lines 1-16)[since the design of the waveguide dimension (cross section of x,y,z) depends on wavelength (λ) and waveguide of inner dimension of GSM band 890-960 MHz test RF device can have 0.14mx0.24mx0.5m that is depend on λ,therefore RF tested device bands are related to the waveguide cross sectional dimension.]

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system for testing RF device comprises waveguide and holder and antenna coupled to the waveguide for transmission and reception of radio frequency signal propagation (as taught by Telewski) by incorporating plurality of ridges having beveled for prevention of reflection into the waveguide (as taught by Kuroda) by using the waveguide dimension as per of test device's dimension for holding the devise inside of the waveguide and RF test device bands wavelength (as taught by Mattsson) for maximizing the bandwidth of the waveguide and easy to a eliminate the reflected signal.

8. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Telewski as modified by Kuroda as applied to claim 17 above and further in view of Chen et al (U.S. Pub. No. 2002/0127971 A1).

Re claim 21, Telewski discloses most of the limitations in combination with

Kuroda with respect to claim 17 except performing the calibration of the test equipment by means of a reference unit having a grounded antenna circuit. However, Chen teaches RF device testing method (same field of endeavor) wherein performing testing / calibration of RF devices (para [0030]) the ground antenna(130 of fig.2) having a grounded circuits (see 130 and R4 of fig.3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system for testing RF device comprises waveguide, holder and antenna coupled to the waveguide for transmission and reception of radio frequency signal propagation (as taught by Telewski) by incorporating plurality of ridges having beveled for prevention of reflection into the waveguide (as taught by Kuroda) by using antenna for performance of calibration of RF devices antenna circuits which is grounded (as taught by Chen) for transmitting propagated signal accurately to the measure devices.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure (7.96)

The following patent are cited to further show the state of the art with respect to clips and bookmarks in general:

U.S. Patent No. 6,329,953 to Mckivergan teaches method and system for antenna performance.

U.S. PG. Pub. 2003/0167282 A1 to Kirkpatrick et al teaches high frequency inductive lamp and power oscillator.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Muhammad Akbar whose telephone number is (571)-270-1218. The examiner can normally be reached on Monday- Thursday (7:30 A.M.-5:00P.M).If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on 571-272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MA

EDAN ORGAD
PRIMARY PATENT EXAMINER

3/20/07